

Achieving a Just Energy Transition in Indonesia

Lasse Toft Christensen and Anissa Suharsono

July 2022

Introduction

Governments around the world face an enormous challenge in tackling the climate crisis.

As highlighted during the 26th Conference of the Parties (COP 26) to the United Nations Framework Convention on Climate Change, the world remains off track to reach the goals of the Paris Agreement. According to the latest Intergovernmental Panel on Climate Change report (2021), global temperature increases are likely to exceed 1.5°C within the next two decades, which will only be avoided with deep and immediate emission reductions. This was echoed by the UN Emissions Gap Report, which puts the world on a 2.7°C track by the end of the century (United Nations Environment Programme, 2021).

Likewise, and very significantly in an Indonesian context, the International Energy Agency (IEA) (2021) has stated that there is no need for any more investments in fossil fuels in its Net Zero 2050 pathway. Finally, according to the 2021 Production Gap Report, the world's governments plan to produce around 110% more fossil fuels in 2030 than would be consistent with limiting warming to 1.5°C, and 45% more than consistent with 2°C (Stockholm Environment Institute, International Institute for Sustainable Development [IISD], Overseas Development Institute, Third Generation Environmentalism, & United Nations Environment Programme, 2021).

Nevertheless, tackling the climate crisis is not only about technology and hardware. It is also about people and societies. There are significant economic, environmental, and social risks connected to clean energy transitions that need to be carefully planned in order to mitigate adverse impacts (Sanchez et al., 2021).

This brief is part of the IISD's series Achieving a Fossil-Free Recovery in Indonesia. The series is based on IISD's flagship report on the issue of achieving a green recovery. In the previous four briefings, we have focused on how Indonesia's recovery funding could be better spent by avoiding fossil fuel spending and supporting clean energy priorities.



In this fifth and final briefing of the series, we will look at how the Government of Indonesia (GoI) can make sure its energy transition and recovery are based on the principles of a just transition.

A just energy transition is essentially a negotiated process that is centred on a social dialogue between governments, industry/employers, and workers, as well as any additional stakeholders, including, for example, energy consumers and communities. A just transition should contribute to decent jobs (including for those people directly affected by the energy transition) and poverty eradication as well as to the mitigation of negative social and economic impacts (Sanchez et al., 2021).

This briefing will look into why the principles of a just transition are important in an Indonesian context. Then, it will look at how these principles have been applied in Indonesia as part of recovery from COVID-19. Finally, it will provide recommendations as to how Indonesia could strengthen its foundation for achieving a just energy transition going forward.

Why Is a Just Transition Important in Indonesia?

While the need to ensure a just energy transition is relevant in most parts of the world, it is particularly true for Indonesia.

A net oil and gas exporter until 2007, Indonesia continues to be a notable oil producer globally, with around 746,800 barrels per day and more than 1 million barrels of oil equivalent per day of gas (International Trade Administration, 2022).

Likewise, Indonesia continues to pay more subsidies to oil and gas than what the government gets in return from the sector. This underlines the need to start planning for a just oil and gas sector transition in order to avoid an even bigger problem in the future as the sector becomes increasingly dependent on public money for survival (Braithwaite & Gerasimchuk, 2019). Adding to future difficulties is the fact that the oil and gas sector in Indonesia has been declining for years and is estimated to continue to decline by 11% per year due to aging oil fields and lack of exploration (International Trade Administration, 2022).

The coal sector is also extremely dominant in the Indonesian economy—even more so than oil and gas.

In terms of jobs and employment, the coal sector is predominant, employing at least 100,000 workers in 2018 (Gabriella & Simamora, 2020). Coal also plays a large role in Indonesia's energy mix, where coal-fired power plants provide more than 60% of total electricity consumption. And although the state-owned generation company, PT Perusahaan Listrik Negara (PLN), has announced that it will build no more coal plants after 2023, the GoI is still carrying through with a significant expansion of coal-fired capacity. This includes the completion of the government's 35-gigawatt (GW) (primarily) coal program—expected to be completed by the end of the decade—and its Fast Track Programme, which aims to add another 7 GW of coal power (Suharsono et al., 2021).

In 2020, Indonesia was the largest exporter of coal in the world, with the bulk of its total production of 679 million tonnes being exported to countries in southeast Asia. Coal exports



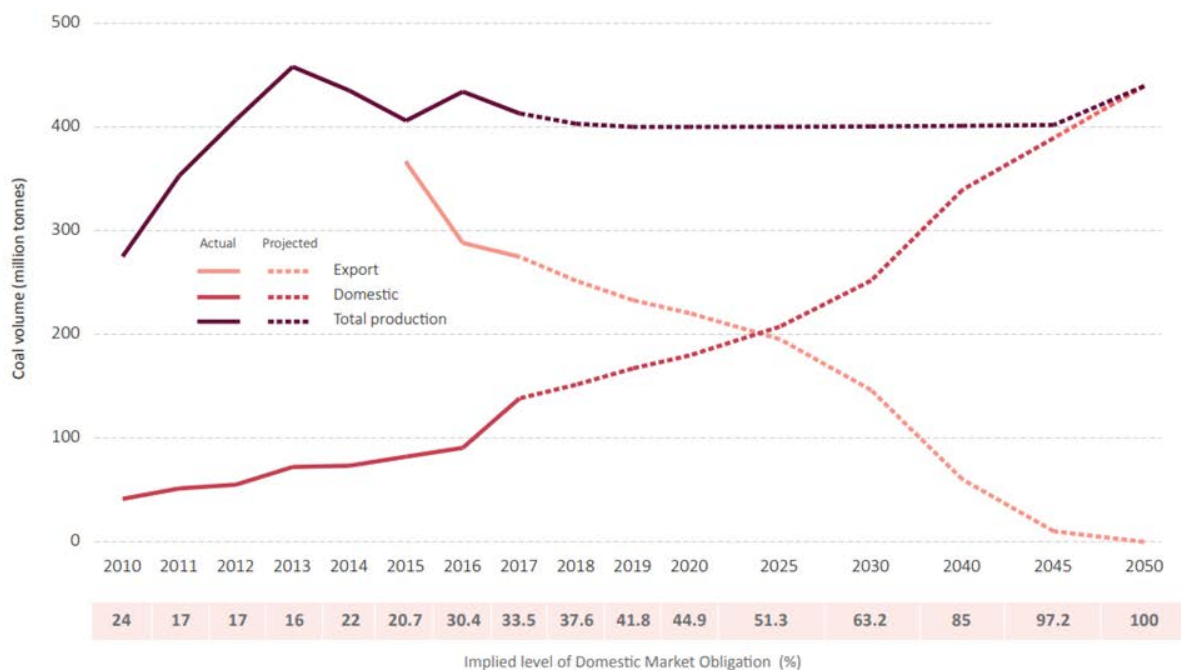
also play a significant role in reducing Indonesia’s trade balance deficit, and there is a risk that transitioning away from coal may widen the deficit gap. Regionally, as well, coal is a huge economic factor, especially across Kalimantan and Sumatra (Gabriella & Simamora, 2020). In East Kalimantan alone, coal exports were valued at USD 9 billion in 2015 and accounted for 45% of the region’s GDP in 2019.

According to the Central Bureau of Statistics (BPS), Indonesia’s coal exports increased by 168.39% year on year in 2021, mainly due to increased export to India and China (CNN Indonesia, 2021). Coal prices have also been steadily increasing since the beginning of 2021, causing many coal producers to prefer to export their production at international prices, instead of fulfilling their Domestic Market Obligation (DMO) of 25% of production at USD 70/ton.

Nevertheless, from 2030, Indonesian coal exports are expected to decline due to lower consumption and coal phase-out in traditional coal markets, such as China, India, and across the South East Asia region.

Nationally, the government expects national coal production to increase by 2030 from 25% to 30% of primary energy consumption. In 2050, coal is expected to still fulfill 25% of Indonesia’s primary energy demand, but at a significantly higher total consumption level, which means that the GoI expects to approximately double the country’s national coal consumption from current levels. As part of the GoI’s net-zero commitment, it is assumed that 75% of coal-fired capacity domestically will have carbon capture installed—an assessment that has been challenged by organizations and think tanks (Lo, 2021).

Figure 1. Planned coal production, domestic sales and exports 2015–2050



Source: Atteridge et al., 2018.



At COP 26, Indonesia also signed the Global Coal to Clean Power Transition Statement, committing to work toward a coal phase-out as soon as 2040, provided it receives additional international financial and technical assistance (United Nations Framework Convention on Climate Change, 2021). However, Indonesia did not commit to ceasing the issuance of new permits for coal plants, and new plants are planned that will provide 13.8 GW of power, to be built by 2030, severely weakening the commitment (Jong, 2021).

Following Indonesia's appointment to the presidency of the G20, the GoI has officially announced energy transition as one of the main pillars of its presidency this year. The G20 Energy Transition Forum, held on February 10, 2022, is expected to bridge both developed and developing countries in the G20 to accelerate the energy transition process (Sutrisno, 2022).

With the significant role of fossil fuels in Indonesia's economy and society, the government needs to start thinking carefully about how it can achieve a just energy transition in a world where demand for fossil fuels will be shrinking dramatically over the coming decades.

How to Ensure a Just Transition?

Just transition has recently gained increasing prominence as part of the global dialogue on low-carbon transitions. It is more than just a fixed set of rules that can be easily implemented. Rather, a just transition entails greening the economy in the most equitable and inclusive manner possible for all stakeholders, creating decent jobs and leaving no one behind (International Labour Organization [ILO], 2022).

The concept of a just energy transition is still relatively new in Indonesia. In 2018, the GoI signed the Silesia Declaration on Just Transition alongside a range of actors at COP 24 in Katowice, Poland.

Although the declaration underlines the need to pay serious attention to the social aspects of the low-carbon transition, there has been a lack of concrete information about just transition policies and knowledge in Indonesia. The GoI's Low Carbon Development plan, published in 2019, was focused on the rationale for a green carbon economy but makes only a single reference to just transition (Elliott & Setyowati, 2020). This absence is echoed in interviews with representatives from the mining advocacy network and consumer organizations, which conclude that no concerted actions on just transition have yet taken place in Indonesia (Gass et al., 2021). This is despite the fact that different governments have recognized challenges around poverty and unfair distribution of burdens as part of low-carbon transitions, as well as that Indonesia's first Nationally Determined Contribution (NDC) includes the idea of the active participation of local and Indigenous communities as well as the most vulnerable groups in society. Just transition as a set of principles, however, was not included (Elliott & Setyowati, 2020).

According to guidelines from the ILO, the guiding principles for a just transition include, but are not limited to,

- Social dialogue and strong social consensus.
- Respect for fundamental rights through all policies.



- Inclusion of gender considerations in environmental policies.
- Coherent policies across economic, environmental, social, education/training, and labour that provide an enabling environment for society to embrace and drive the transition toward environmentally sustainable and inclusive economies and societies.
- Policies that provide a just transition framework for all to promote the creation of more decent jobs.
- Recognition of the importance of local context and the fact that there is no “one size (that) fits all” (ILO, 2015).

Thus, there are several things that governments can do to facilitate a just energy transition. In addition, IISD has looked specifically at how governments in countries with fossil fuel-intensive economies, such as Indonesia, may approach the principles of just transition. To this end, we have identified a set of three primary actions that governments should prioritize:

1. **Social dialogue:** Just transition planning and policies need to be based on tripartite social dialogue between governments, workers, and employers. Likewise, other affected stakeholder groups should be involved through meaningful stakeholder engagement processes to develop a set of just transition recommendations that can guide politics.
2. **Economic diversification, not least during times of recovery:** This includes defining ambitious targets and industrial policies for affected regions that can send clear market signals and support the transition. State-owned enterprises (SoEs) can act as agents of change and should be utilized.
3. **Early action:** Starting early is critical to mitigating risks for people and societies affected by energy transitions.

In the section below, we will look at these three principles in an Indonesian context.

How to Ensure a Just Transition in Indonesia?

1. Social Dialogue

A tripartite social dialogue between relevant stakeholders is an important process to ensure that the principles of a just transition can be embedded into policies.

In Indonesia, such social dialogue has not yet been formalized. Neither has it been part of discussions around green recovery spending. The Indonesian Consumers Foundation (Yayasan Lembaga Konsumen Indonesia, or YLKI) has previously spoken in favour of reforming fossil fuel subsidies in a just manner through the reallocation of subsidies toward social benefits. Likewise, the mining advocacy network, JATAM, is founded on principles that are broadly aligned with just transition ideals. However, these voices are heard only sporadically, and any tripartite social dialogue on just transition is far from organized, as is also the case for any broader discussions about a just phase-out of coal. In fact, tripartite discussions in Indonesia are labelled by some as being contentious (Gass et al., 2021).



More importantly, Indonesian trade unions have recently called directly on the GoI to form a tripartite structure to discuss climate change issues and just transition in light of the future coal phase-out. However, while certain ministries and Asosiasi Pengusaha Indonesia (the Indonesian Entrepreneur Association) have participated in some dialogues on the issue, it is still far from institutionalized (Indonesian Trade Union, 2021).

There are many examples from other countries that have established a social dialogue on just transition to involve the people affected by an energy transition in policy-making. Indonesia could learn from these examples to better institutionalize a tripartite social dialogue of its own.

In South Africa, a council of participants from government, business, organized labour, and civil society worked together on a transition plan for the state-owned energy company Eskom, for example, by formulating plans for repurposing coal plants. In Canada, representatives from labour organizations and local government worked together on a report on a just coal phase-out that was later incorporated into the national just transition strategy (Gass et al., 2021).

Although Indonesia would need a tailored approach of its own, there are also similarities to Indonesia to be found in both South Africa and Canada, for example, where coal labour is well organized and has been a significant part of the local economy and community for decades.

2. Economic Diversification

Economic diversification is an important part of the principles behind a just transition. This is particularly true for fossil fuel-producing countries, which should make it a priority to invest in economic diversification as part of the energy transition and green recovery (Sanchez et al., 2021).

The clean energy transition will provide a substantial opportunity for the GoI to promote economic and social development and be able to provide such things as better jobs, better air quality, and better health care (IEA, 2021).

International experience clearly indicates that a just transition depends on long-term and carefully implemented programs that are focused on workers, in order to be successful. In Indonesia, energy industries are often geographically concentrated in a few regions, where they play an important part in the economic and social system of the community (IEA, 2021). This is the case, for example, in Kalimantan in Indonesia, where the coal industry's impact on society is significant and where a tailored approach is needed to help the community adjust to and benefit from the clean energy transition.

This situation is exacerbated by the fact that, quite often, fossil fuel-intensive regions are not identical with those regions that are likely to see a massive deployment of clean energy with the accompanying jobs and economic benefits. Therefore, it is necessary to invest proactively in diversification in those regions that are going to be most affected by the energy transition.

So far, however, the GoI has not utilized its recovery spending to help diversify its economy. Like many other governments, the GoI did prioritize supporting poor households under its



various social protection and health schemes, as well as directing some support to small and medium-sized enterprises.

However, as concluded in previous IISD analyses, the majority of Indonesia's energy-related recovery spending went directly to fossil fuels. In 2020, Indonesia's fossil fuel industry received IDR 108.5 trillion (USD 7.5 billion) as part of COVID-19 recovery packages, in addition to annual energy subsidies totalling IDR 97.4 trillion (USD 6.7 billion). Further, a huge bulk of Indonesia's recovery spending was paid out directly via a range of SoEs. As part of this, PT Pertamina and PT PLN received IDR 37.8 (USD 2.6 billion) and IDR 45.5 trillion (USD 3.2 billion), respectively, in direct COVID-19 support in 2020 (Sumarno & Sanchez, 2021).

SoEs can play a key role in ensuring a just energy transition. As the majority stakeholder, the government is able to include a range of social aspects or requirements in its recovery spending through SoEs (Sanchez et al., 2021). We have seen this in other countries, as well—for example, in Denmark, where Orsted has played a pioneering role in the country's transition toward a green electricity sector and was responsible for early investments in offshore wind energy.

Nevertheless, the GoI has not yet taken the opportunity to include conditionalities that could kickstart additional investments from SoEs into renewable energy or facilitate a just energy transition. These conditionalities could include, for example, job requirements, training, or other social aspects as a requirement for receiving COVID-19 recovery funding.

In addition, the government has taken concrete steps to support its fossil fuel industries in times of crisis. Both the Ministry of Energy and Mineral Resources' Regulation No. 7/2020 (Ministry of Energy and Mineral Resources, 2020) and the Job Creation Law (UU No. 11/2020) (Government of Indonesia, 2020) facilitate easier administrative and business procedures for the mining sector, including increasing the size of coal mines from 15,000 hectares to 25,000 hectares; as well, it forfeits royalty payments on processing coal into gas to limit imports of liquefied petroleum gas (LPG) (Nangoy & Asmarini, 2020).

Likewise, Indonesia continues to pay out a hefty fossil fuel subsidy bill each year, estimated at a total of IDR 97.4 trillion. Subsidies in Indonesia are highly regressive and primarily benefit the wealthier in society. This is especially the case for transport fuels, but also for LPG and electricity, despite the efforts of the GoI to target these subsidies to low-income households.

For any energy transition in Indonesia to be just, it would need to include efforts to reform fossil fuel subsidies. Subsidies to fossil fuels are helping to keep Indonesia on its current pathway, and their reform would be an important step toward better economic diversification of the economy. Subsidy reform could, for example, take place through better targeting of LPG subsidies to poor households or by removing transport subsidies for gasoline and diesel in order to free up money to invest in clean energy, energy access, jobs creation, or regional development, in line with the principles of a just transition.

In this regard, the government's recent announcement that it would develop a new scheme for PT PLN to purchase coal at market prices instead of using the discounted DMO price was a welcome one. The current DMO is supposed to deliver 25% of PT PLN's supply and has a



cap of USD 70 per tonne, which is well below market prices and a significant subsidy to coal-generated power.

The move from the government came following PT PLN's concern about a domestic coal shortage, with only 1% of the DMO being met, potentially leading to more than 10 million customers experiencing blackouts (Idris, 2022). To address the issue, the government tightened regulations on the companies to meet the DMO and imposed a temporary export ban for January 2022 to force domestic coal companies to deliver to the national market. However, the ban was lifted after 14 days, after PT PLN had been restocked, and the government had received a lot of backlash from the industry, which—according to industry representatives—may have lost up to USD 3 billion due to the ban (Global Voices, 2022). At the time of writing, it is currently unclear how and when the government intends to follow through on its announcement to scrap the DMO with a new pricing mechanism.

Likewise, the recent introduction of a carbon tax was also a welcome step in terms of lowering the incentives for domestic coal use. In early October 2021, Indonesia became the fourth country in Asia to pass such a tax. It is set at a minimum of IDR 30 per kilogram of carbon dioxide contained in or emitted through goods and services. This is equivalent to USD 2.11 per ton of carbon dioxide and less than half of the rate that the government originally proposed. The carbon tax is expected to be implemented in April 2022 (Jakarta Globe, 2021). The government also plans a carbon trading regime, and a carbon market is expected to operate by 2025 (Allen & Overy Indonesia, 2021).

Although the carbon tax is a step in the right direction, it is not enough to ensure economic diversification. In fact, modelling by the Ministry of National Development Planning itself (BAPPENAS) makes it clear that setting an ambitious net-zero target for 2050 and implementing progressive policies would contribute not only to lower emissions and better air quality but also create the foundation for a just transition in terms of better and more resilient jobs (Tao, 2021). In 2017, BAPPENAS launched its Low Carbon Development Initiative (LCDI), a process for developing sustainable development policies that highlights the importance of such a just transition (Garrido et al., 2019). In its most recent LCDI report, BAPPENAS estimates that by pursuing a net-zero by 2050 plan, Indonesia would create 1.8–2.2 million green jobs in the energy, EVs, land restoration, and waste sectors by 2030. The creation of green jobs is expected to offer higher returns to the economy than transitional fiscal stimuli and thus prove a resilient recovery strategy. The new jobs are also projected to pay better than other positions for employees with similar skill sets (BAPPENAS, 2021). These numbers are echoed in other countries that are facing similar challenges, as well. In India in 2014, the installing of around 22 GW of energy production from onshore wind technology resulted in the employment of some 48,000 people, equalling more than two jobs per MW installed. Similar numbers from offshore wind energy in Denmark suggest that around 14,500 jobs are created per GW of offshore wind. In Kenya, the 300 MW Lake Turkana wind project resulted in 150 permanent jobs during operation (in addition to 1,500 jobs during construction) (Danish Energy Agency, 2021).

Since jobs in the fossil fuel sector will be lost through pursuing net-zero plans, the LCDI report highlights the importance of direct support measures for workers affected. It also recommends including stakeholders from businesses and civil society into the development of



transition policies to generally make sure no one is left behind, in line with the principles of just transition (Dansk Energi, 2020; Medrilzam et al., 2021).

In this regard, the plans for creating a Green Industrial Area to produce green aluminum, solar panels, and industrial silicone in North Kalimantan is a very positive development. President Joko Widodo has estimated that around 200,000 jobs could be created over time in the area, which could help diversify the economy in the region over the coming decades and replace some of the jobs that may be lost when coal is phased out globally toward 2050 (AP & Kurmala, 2021).

3. Early Action

A third pillar to achieving a successful transition in fossil fuel-intensive economies is early action. This means that the GoI should start acting sooner rather than later. The oil and gas sector is already in decline, and contingency plans should be put in place instead of continued public subsidies for the sector.

On coal, the road ahead looks bumpy, and the government still has to fully acknowledge that there will be a day when coal is no longer dominant in the power sector. However, the transition globally away from coal is happening quickly, and the pace is only likely to increase as countries submit updated NDCs under the Paris Agreement.

Global coal consumption peaked in 2013, and recent international developments suggest that coal use is also quickly declining across Southeast Asia (IEA, 2020). In the Philippines, there is now a moratorium on new coal (announced in October 2020). Vietnam is cancelling coal power plant projects and working with international partners to develop reusable energy, including creating a market for offshore wind. Even in Bangladesh, the government is assessing how to move away from coal-fired power as it struggles to find financing for the transition (Climate Action Tracker, 2021). In coal-intensive regions, thousands of jobs and livelihoods are at stake, and there are many examples in the past of how the sector leaves stranded assets behind as soon as markets collapse. In 2017, it was estimated that more than 630 open-pit mines were left stranded by mine companies in East Kalimantan due to a crash in coal prices internationally. The abandoned mines caused the deaths of at least 27 people as well as leaving huge impacts on the local environment and water quality due to acidification and pollution.

International experience shows that when early action is taken to ensure a just transition away from fossil fuels, many negative impacts can be mitigated. For example, within its transition away from oil and gas extraction, Denmark's government is designing programs to ensure that former employees of these sectors are provided with the training and opportunities necessary to switch to green jobs, building on the skills they already have (IEA, 2020). Likewise, in Poland, the government and trade unions have agreed to phase out coal mining by 2049, and are currently working with coal-intensive regions to draw up diversification plans that will help affected communities through the transition (Farand, 2020).



Recommendations

1. Increase government capacity on just transition and institutionalize principles across administration. This could be coordinated through BAPPENAS, for example, which is already advanced in its thinking on just transition, and the issue could be included in Indonesia's NDC. This would be a way to anchor and institutionalize the concept of just transition in the government, and would strengthen the GoI's ability to integrate principles into policy and spending. Key actors in the fossil fuel industry and regional representatives—including from the informal economy—should ideally take part.
2. The GoI should acknowledge the calls from Indonesian unions and institutionalize tripartite social dialogue in order to have an established forum for discussing issues around just transition and climate change. This will be necessary for Indonesia to ensure the transition toward green energy will be positive for its people and society.
3. Coal is still king in Indonesia, but it will not be forever. The GoI needs to acknowledge that there will be a future after coal and that the time may come sooner than current government projections, which foresee a massive coal industry well into the 2050s. This will help the GoI to take steps toward the actual economic diversification of its fossil fuel-dependent regions.
4. SoEs should be more deeply involved in a green recovery and transition for Indonesia. The GoI should help bolster these enterprises in the future by attaching green conditionalities to future recovery funding.



References

- Allen & Overy Indonesia. (2021). *Indonesia's DPR passes carbon tax as part of proposed cap-and-trade system*. https://www.allenoverly.com/global/-/media/allenoverly/4_blogs/countdown-to-cop/indonesia_passes_carbon_tax_bill_as_part_of_ghg_regulation_effort.pdf
- AP, I., & Kurmala, A. (2021, December 21). *N Kalamantan green industrial area to become world's largest*. Antara Indonesian News Agency. <https://en.antaranews.com/news/205633/n-kalimantan-green-industrial-area-to-become-worlds-largest-widodo>
- Atteridge, A., Aung, M., & Nugroho, A. (2018). *Contemporary coal dynamics in Indonesia*. Stockholm Environment Institute. <https://www.sei.org/wp-content/uploads/2018/06/contemporary-coal-dynamics-in-indonesia.pdf>
- BAPPENAS. (2021). *A green economy for a net zero future: How Indonesia can build back better after COVID-19 with the Low Carbon Development Initiative (LCDI)*. <https://lcdi-indonesia.id/wp-content/uploads/2021/10/Exsum-GE-Report-Lowres-29-Sept.pdf>
- Braithwaite, D., & Gerasimchuk, I. (2019). *Beyond fossil fuels: Indonesia's fiscal transition*. International Institute for Sustainable Development, Global Subsidies Initiative. <https://www.iisd.org/system/files/publications/beyond-fossil-fuels-indonesia-fiscal-transition.pdf>
- Climate Action Tracker. (2021). *How a COVID-19 recovery with less coal could benefit Indonesia*. https://climateactiontracker.org/documents/852/CAT_2021-04-29_Indonesia-COVID-19-Recovery.pdf
- CNN Indonesia. (2021, October 15). *Ekspor Batu Bara Naik 168 Persen saat China Krisis Listrik*. <https://www.cnnindonesia.com/ekonomi/20211015124303-85-708250/ekspor-batu-bara-naik-168-persen-saat-china-krisis-listrik>
- Danish Energy Agency. (2021). *Technology data for the Indonesian power sector: Catalogue for generation and storage of electricity*. https://ens.dk/sites/ens.dk/files/Globalcooperation/technology_data_for_the_indonesian_power_sector_-_final.pdf
- Dansk Energi. (2020, June 25). *New report: Offshore wind secures thousands of jobs* [Press release]. <https://www.danskenergi.dk/nyheder/pressemeddelelse/ny-rapport-havvind-sikretusindvis-arbejdspladser>
- Elliott, L., & Setyowati, A. B. (2020). *Toward a socially just transition to low carbon development: The case of Indonesia*. *Asian Affairs*, 51(4), 875–894. <https://doi.org/10.1080/03068374.2020.1835000>
- Farand, C. (2020, September 25). *Poland agrees [to] coal mining phase out with unions by 2049*. Climate Home News. <https://www.climatechangenews.com/2020/09/25/poland-agrees-coal-mining-phase-unions-2049/>
- Gabriella, M., & Simamora, P. (2020). *Memastikan transisi energi yang berkeadilan di Indonesia: Pembelajaran dari studi kasus empat negara* [Webinar]. Institute for Essential Services Reform. <https://iesr.or.id/wp-content/uploads/2020/09/Webinar-JT.pdf>



- Garrido, L., Medrilzam, A. A., Yananto, I. D., McGregor, M., Brand, J., Opitz Stapleton, S., Sayers, P., Nadin, R., & Quevedo, A. (2019). *Low carbon development: A paradigm shift towards a green economy in Indonesia* (Full report). Kementerian PPN/Bappenas; Low Carbon Development Indonesia. https://www.greengrowthknowledge.org/sites/default/files/downloads/policy-database/indonesia_lowcarbon_development_full%20report.pdf
- Gass, P., Gerasimchuk, I., Kuehl, J., Roth, J., & Wooders, P. (2021). *Just transition to a green economy: Employment, economic, and social consequences of the transition to an ecologically sustainable economy in developing countries*. International Institute for Sustainable Development; Deutsche Gesellschaft für Internationale Zusammenarbeit. <https://www.iisd.org/publications/report/just-transition-green-economy>
- Global Voices. (2022). *Home page*. <https://globalvoices.org/2022/01/18/an-overview-of-indonesias-coal-export-ban-and-asias-energy-crisis/>
- Government of Indonesia. (2020). *JDIH BPK RI*. <https://peraturan.bpk.go.id/Home/Details/149750/uu-no-11-tahun-2020>
- Idris, M. (2022, January 13). *Corrected by Jokowi, coal export prohibition only lasts 11 days*. Kompas. <https://money.kompas.com/read/2022/01/13/104749426/diralat-jokowi-larangan-ekspor-batu-bara-cuma-berumur-11-hari>
- Indonesian Trade Union. (2021, June 5). *Indonesian trade unions' public statement at World Environment Day*.
- Intergovernmental Panel on Climate Change. (2021). *Climate change 2021: The physical science basis: Working group 1 contribution to the sixth assessment report of the Intergovernmental Panel on Climate Change*. https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_SPM_final.pdf
- International Energy Agency. (2020, December 18). *A rebound in global coal demand in 2021 is set to be short-lived, but no immediate decline in sight* [Press release]. <https://www.iea.org/news/a-rebound-in-global-coal-demand-in-2021-is-set-to-be-short-lived-but-no-immediate-decline-in-sight>
- International Energy Agency. (2021). *Recommendations of the global commission on people-centred clean energy transitions*. <https://iea.blob.core.windows.net/assets/a01c5f4a-e833-42da-9387-830fcb024046/Recommendationsoftheglobalcommissiononpeople-centredcleanenergytransitions.pdf>
- International Labour Organization. (2015). *Guidelines for a just transition towards environmentally sustainable economies and societies for all*. https://www.ilo.org/wcmsp5/groups/public/---ed_emp/---emp_ent/documents/publication/wcms_432859.pdf
- International Labour Organization. (2022). *Frequently asked questions on just transition*. https://www.ilo.org/global/topics/green-jobs/WCMS_824102/lang--en/index.htm
- International Trade Administration. (2022). *Energy resource guide*. <https://www.trade.gov/energy-resource-guide-indonesia-oil-and-gas>
- Jakarta Globe. (2021, October 1). *Indonesia is set to introduce \$2.1 per ton of CO₂e carbon tax*. <https://jakartaglobe.id/business/indonesia-is-set-to-introduce-21-per-ton-of-co2e-carbon-tax>



- Jong, H. N. (2021). *COP26 cop-out? Indonesia's clean energy pledge keeps coal front and center*. <https://news.mongabay.com/2021/11/cop26-cop-out-indonesias-clean-energy-pledge-keeps-coal-front-and-center/>
- Lo, J. (2021, July 23). *Indonesia to burn coal well into the 2050s, under updated climate plan*. Climate Home News. <https://www.climatechangenews.com/2021/07/23/indonesia-plans-burn-coal-well-2050s-updated-climate-plan/>
- Ministry of Energy and Mineral Resources. (2020). *JDIH BPK RI*. <https://peraturan.bpk.go.id/Home/Details/142152/permen-esdm-no-7-tahun-2020#:~:text=Permen%20ESDM%20No.%207%20Tahun,Dan%20Batubara%20%5BJDIH%20BPK%20RI%5D>
- Nangoy, F., & Asmarini, W. (2020, February 18). *Miners welcome Indonesia's new jobs bill that could spur coal growth*. Reuters. <https://www.reuters.com/article/us-indonesia-economy-bill-mining-idINKBN20C0KK>
- Sanchez, L., Bridle, R., Corkal, V., Gass, P., Geddes, A., Gerasimchuk, I., Kuehl, J., Laan, T., Moerenhout, T., Muttitt, G., Muzondo, C., Pant, A., Roth, J., Sharma, S., Viswamohan, A., & Viswanathan, B. (2021). *Achieving a fossil-free recovery*. International Institute for Sustainable Development, Global Subsidies Initiative. <https://www.iisd.org/system/files/2021-05/achieving-fossil-free-recovery.pdf>
- Stockholm Environment Institute, International Institute for Sustainable Development, Overseas Development Institute, Third Generation Environmentalism, & United Nations Environment Programme. (2021). *The production gap: Government's planned fossil fuel production remains dangerously out of sync with Paris Agreement limits* (Report). https://productiongap.org/wp-content/uploads/2021/11/PGR2021_web_rev.pdf
- Suharsono, A., Lontoh, L., & Maulidia, M. (2021). *Indonesia's energy policy briefing*. International Institute for Sustainable Development, Global Subsidies Initiative. <https://www.iisd.org/system/files/2021-03/indonesia-energy-policy-briefing-february-2021-en.pdf>
- Sumarno, T. B., & Sanchez, L. (2021). *How Indonesia can achieve both a COVID-19 recovery and its climate targets (Achieving a fossil-free recovery in Indonesia, Brief #1)*. International Institute for Sustainable Development, Global Subsidies Initiative. <https://www.iisd.org/system/files/2021-10/indonesia-achieve-covid-19-recovery-climate-targets.pdf>
- Sutrisno, E. (2022, February 10). *G20 energy transition launch, president: Energy transition action must be fair*. Indonesia Information Portal. <https://indonesia.go.id/kategori/editorial/4092/peluncuran-transisi-energi-g20-presiden-aksi-transisi-energi-harus-berkeadilan>
- Tao, J. Y. (2021, October 6). *Unpacking Indonesia's long term climate strategy: Will it be a regional green growth champion or a middling laggard clinging to coal?* TransitionZero. <https://www.transitionzero.org/insights/unpacking-indonesias-long-term-climate-strategy>
- United Nations Environment Programme. (2021). *Emissions gap report 2021*. <https://www.unep.org/resources/emissions-gap-report-2021>
- United Nations Framework Convention on Climate Change. (2021). *Global coal to clean power transition statement*. <https://ukcop26.org/global-coal-to-clean-power-transition-statement/>

© 2022 The International Institute for Sustainable Development
Published by the International Institute for Sustainable Development.

This publication is licensed under a [Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International License](https://creativecommons.org/licenses/by-nc-sa/4.0/).

INTERNATIONAL INSTITUTE FOR SUSTAINABLE DEVELOPMENT

The International Institute for Sustainable Development (IISD) is an award-winning independent think tank working to accelerate solutions for a stable climate, sustainable resource management, and fair economies. Our work inspires better decisions and sparks meaningful action to help people and the planet thrive. We shine a light on what can be achieved when governments, businesses, non-profits, and communities come together. IISD's staff of more than 120 people, plus over 150 associates and consultants, come from across the globe and from many disciplines. With offices in Winnipeg, Geneva, Ottawa, and Toronto, our work affects lives in nearly 100 countries.

IISD is a registered charitable organization in Canada and has 501(c)(3) status in the United States. IISD receives core operating support from the Province of Manitoba and project funding from governments inside and outside Canada, United Nations agencies, foundations, the private sector, and individuals.

Head Office

111 Lombard Avenue, Suite 325
Winnipeg, Manitoba
Canada R3B 0T4

Tel: +1 (204) 958-7700

Website: www.iisd.org

Twitter: @IISD_news

